



# UNITED STATES PATENT AND TRADEMARK OFFICE

6B

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,220	01/17/2002	Alfred Edlinger	1712637	9389

7590

02/25/2004

Robert J Schneider  
Chapman and Cutler  
111 West Monroe Street  
Chicago, IL 60603

EXAMINER

KASTLER, SCOTT R

ART UNIT	PAPER NUMBER
----------	--------------

1742

DATE MAILED: 02/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/049,220	EDLINGER, ALFRED	
	<b>Examiner</b>	<b>Art Unit</b>	
	Scott Kastler	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

Art Unit: 1742

### *Specification*

The disclosure is objected to because of the following informalities: In order to render the specification more clear it is suggested that the specification be amended to include section headings for the brief description of the drawings, etc.

Appropriate correction is requested.

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 1-33, entered in the pre-amendment filed on 1-17-2002 have been renumbered as claims 12-44.

### *Drawings*

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81. No new matter may be introduced in the required drawing. Drawings, although referred to in the instant specification, have not yet been submitted with the U.S. application.

### *Claim Objections*

Claims 40, 43 and 44 are objected to because of the following informalities: Each of the above claims employs terminology ("preferably" in claim 29 and "such as e.g." in claims 32 and

Art Unit: 1742

33) which render the claims potentially unclear as to the scope of the claim, since these terms render the claims potentially unclear as to whether or not the limitations following the terms are intended to limit the claims or are merely non-limiting examples of sizes (in the case of claim 29) or compositions (in the case of claim 32 and 33) which would meet the conditions of the above claims. For examination purposes, the above limitations following the terms "preferably" and "such as e.g." were considered merely non-limiting examples. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

Claims 12-15, 20, 21, 26, 27, 36, 37, 40 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'942. WO'942 teaches a system and method for atomizing liquid slags including a slag tundish (1) with heaters (4) containing a slag melt (2) having a bottom in the shape of a funnel (at 5) in the area of the outlet which attaches the tundish to an expansion or cooling chamber (6), with a propellant lance (7) which is capable of achieving the instantly required gas pressures and speeds, and an underflow weir (8) surrounding the lance showing all aspects of the above claims except the instantly recited gap widths or outlet configurations, although both the system described by WO'942 and the instant claims operate in substantially the same manner (injecting gas into a liquid slag at an outlet within an underflow weir before the slag enters a cooling chamber) for substantially the same purpose (to atomize or comminute the liquid slag) with substantially the same stated results (superior atomization or comminution of the liquid slag). It has been well settled that where, as in the instant case, an apparatus or system described by the prior art operates in substantially the same manner for substantially the same

Art Unit: 1742

purpose as a claimed system, motivation to alter the shape or configuration of a component of the prior art system (in the instant case the spacing between the weir (8) and tundish bottom or the outlet configuration of WO'942) without demonstrating any new or unexpected results arising from altering the shape or configuration, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Dailey*, 149 USPQ 47 and MPEP 2144.04 IV B. In the instant case, motivation to alter either of the gap width or the outlet configuration taught by WO'942, without materially altering the operation of, or the results obtained by, the system disclosed by WO'942, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 18, 19, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO'942 in view of either of JP'436A or JP'867A. As applied to claim 1 above, WO'942 fairly shows or suggests all aspects of the above claims except the specific material from which the tundish, outlet or weir are made, specifically SiC, although WO'942 allows for the use of such a material. Both of Japanese'436A and Japanese'867A teach, in their attached partial translations for example, that SiC (silicon carbide) is a well known material employed for the construction of tundish components intended to be immersed in slag or liquid metals, and that this material imparts high hot strength and resistance to molten steel and slag, thereby increasing the useful life of these components. Because improved service life of the tundish, outlet and weir of WO'942 would also be desirable, motivation to construct these components from silicon carbide, as taught by either of Japanese'436A or Japanese'867A, in order to increase the service life of these components, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Art Unit: 1742

Applicant cannot rely upon the foreign priority papers to overcome these rejections because a translation of said papers has not been made of record in accordance with 37 CFR

1.55. See MPEP § 201.15.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 12-16, 20-22, 26, 27, 30, 31 and 34-42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4 and 5 (for the above claims reciting heating elements) of U.S. Patent No. 6,660,223 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims 4 and 5 of the '223 patent teaches a system for atomizing liquid slags including a slag tundish with heaters (see claim 5 where a power source provides electrical heating to a region of the tundish, thereby meeting the requirement of a tundish heater) containing a slag melt having a bottom in the shape of a funnel in the area of the outlet which attaches the tundish to an expansion or cooling chamber, with a propellant lance (3) which is capable of achieving the

Art Unit: 1742

instantly required gas pressures and speeds, comprising inner and outer tubes, where the outer tube would meet the requirements of an "underflow weir" surrounding the inner lance, thereby showing all aspects of the above claims except the instantly recited gap widths or outlet configurations, although both the system described by the '223 Patent and the instant claims operate in substantially the same manner (injecting gas into a liquid slag at an outlet within an underflow weir before the slag enters a cooling chamber) for substantially the same purpose (to atomize or comminute the liquid slag) with substantially the same stated results (superior atomization of comminution of the liquid slag). It has been well settled that where, as in the instant case, an apparatus or system described by the prior art operates in substantially the same manner for substantially the same purpose as a claimed system, motivation to alter the shape or configuration of a component of the prior art system (in the instant case the spacing between the weir and tundish bottom or the outlet configuration of the '223 Patent) without demonstrating any new or unexpected results arising from altering the shape or configuration, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made. See *In re Dailey*, 149 USPQ 47 and MPEP 2144.04 IV B. In the instant case, motivation to alter either of the gap width or the outlet configuration taught by '223 Patent, without materially altering the operation of, or the results obtained by, the system disclosed by the '223 Patent, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.

Claims 17-19, 23-25, 28, 29, 32 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4 and 5 of U.S. Patent No. 6,660,223 B2 in view of either of JP'436A or JP'867A. As applied to claim 1 above, the

Art Unit: 1742

'223 Patent fairly shows or suggests all aspects of the above claims except the specific material from which the tundish, outlet or weir are made, specifically SiC, although the '223 Patent claims allow for the use of such a material. Both of Japanese'436A and Japanese'867A teach, in their attached partial translations for example, that SiC (silicon carbide) is a well known material employed for the construction of tundish components intended to be immersed in slag or liquid metals, and that this material imparts high hot strength and resistance to molten steel and slag, thereby increasing the useful life of these components. Because improved service life of the tundish, outlet and weir of the '223 Patent would also be desirable, motivation to construct these components from silicon carbide, as taught by either of Japanese'436A or Japanese'867A, in order to increase the service life of these components, would have been a modification obvious to one of ordinary skill in the art at the time the invention was made.



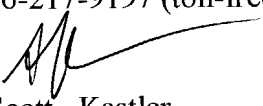
Art Unit: 1742

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Kastler whose telephone number is (571) 272-1243. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Scott Kastler  
Primary Examiner  
Art Unit 1742

sk